IDENTIFICATION OF FATTY ACID METHYL ESTER COMPOSITION IN BIODISEL PRODUCT IN DIFFERENT TYPE OF VEGETABLE OILS

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This Final Year Project entitled "Identification of Fatty Acid Methyl Ester (FAMES) composition in biodiesel product in different type of oils" was submitted by Munirah Bt Abdullah, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons) Applied Chemistry, in the faculty of Applied Sciences, and was approved by

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ABSTRACT

IDENTIFYING FATTY ACID METHYL ESTER
(FAMES) IN BIODISEL IN DIFFERENT TYPE OF OILS

Biodiesel can be defined as simple alkyl ester of fatty acid produced from vegetable oils and animal fats. Because of increases in crude oil prices, limited resources of fossil fuel and environmental concerns there has been renewed focus on palm oils and vegetable oils. There are four primary ways to make biodiesel, direct use and blending, microemulsions, thermal cracking (pyrolysis) and transesterification. The most commonly used method is transesterification of vegetable oils and animal fats. The transesterification reaction is affected by molar ratio of glycerides to alcohol, catalysts, reaction temperature, reaction time and free fatty acids and water content of oils or fats. The objective of this project to identify Fatty Acid Methyl Ester (FAMEs) that has been produced from palm oil and corn oil using gas Chromatography (GC-MS). From the study, there are two different type of FAMES in vegetable oils which are saturated and unsatataturated. Different types of FAMES result to the different types of biodiesel. Transesterification process can be done either using acid-catalyst or base catalyst. In this study, transesterification has been done using base catalyst Potassium hydroxide was mixing with methanol to produce potassium methoxide. There are different ratio of Potassium to methanol used to know whether the different ratio affect the yield of product. Smaller ratio used gives the high yield of product compared to larger ratio. Commercialization of biodisel as renewable energy beneficial to country, environment, and consumer.